

Amendments to the Specification:

[0005] The total length of the bed of sand that is employed in accordance with the instant invention is preferably for about 30 to about 48 inches. Typically, only about the top 8 inches of sand captures a substantial portion (e.g. over 90 percent and, in some cases, about 99 percent) of the material removed by the filtration process. Therefore, if the upper layer of sand is periodically cleaned or replaced, the remainder of the sand need not be replaced. In accordance with this embodiment of the invention, the bed of sand is divided into at least two portions. The first portion of the bed of sand that the water encounters (e.g. the top layer) is provided in a container that is removable from the rest of the apparatus. For example, the bed of sand may be provided in at least two containers that are removablely mounted in a housing. Accordingly, when it is necessary to clean or replace the first portion of the bed of sand, the first portion of the bed of sand may be removed from the housing as a discreet element. Thus, a user need only remove one portion of the bed of sand reducing the mess that may be created in this process.

[0013] Figure 1 is a ~~is~~ a schematic drawing of a first embodiment of a water treatment apparatus according to the instant invention;

[0015] Figure 3 is a schematic drawing of a third embodiment of a water treatment apparatus according to the instant invention; and,

[0021] Container 20 may be of any shape known in the art and typically has a bottom 24, a top 26 and sidewalls 28 extending between bottom 24 and top 26. Container 20 has a water inlet 28 38 and an outlet 30 so as to permit water to flow through sand 34 that is positioned in container 20. A passageway 38 may be optionally provided to connect outlet 32 of one container 20 with inlet 30 of the container 20 that is immediately downstream. Alternately, the downstream end of the outlet 32 of one container 20 may matingly engage the upstream end of an inlet 30 of the adjacent

downstream container 20. Sand 34 may be retained in containers 20 by any means known in the art so as to prevent sand 34 from exiting container 20 with the flow of water therethrough. For example, in a preferred embodiment, a substrate 36 is provided in the bottom of each container 20. The substrate may be a woven material such as woven polyethylene. The substrate has openings that are sufficiently large to permit water to flow upwardly, or downwardly, therethrough but sufficiently small to retain sand 34 in container 20.

[0031] During the operation of a sand filter, a layer of biological material tends to form on top of the sand. This layer typically contains bacteria that prey on harmful bacteria, such as those which comprise human pathogens. This layer is known in the art as the schmutzdecke. This layer enhances the filtration characteristics of a sand filter. One disadvantage of current sand filters is that it takes about three to four weeks for the schmutzdecke to form when a new filter is put into service, or when a sand filter is cleaned. In accordance with another embodiment of the instant invention, a cartridge 100 of biological material may be provided. The biological material in the cartridge may be added to one or more containers 20 of sand when the container is placed into service. The biological material helps the formation, or accelerates the formation of the schmutzdecke. The cartridge may be provided as part of container 20, such as in the lid thereof, so as to be positioned above the sand 34. The cartridge may be pierced, or opened, by a handle provided exterior to container 20. Thus, when container 20 is mounted in apparatus 10, the cartridge may be opened to release the biological material without the user coming into contact with the biological material.